1992-1993
Biennial Report to Congress on the Administration of the Coastal Zone Management Act
Volume I — Executive Summary
April 1994

UNITED STATES DEPARTMENT OF COMMERCE
The Under Secretary for
Oceans and Atmosphere
Washington, D.C. 20230

March 1, 1994

The President
President of the Senate
Speaker of the House of Representatives

Sirs:

I am pleased to submit the Biennial Report of the Office of Ocean and Coastal Resource Management, National Ocean Service, National Oceanic and Atmospheric Administration, pursuant to Section 316 of the Coastal Zone Management Act of 1972, as amended (16 U.S.C. 1451, et seq.) for Fiscal Years 1992 and 1993. The report discusses the progress made during these years in administering the coastal zone management and estuarine research reserve programs and the challenges encountered.

Sincerely,

D. James Baker

THE ADMINISTRATOR

About This Document

The Biennial Report to Congress is a status report on implementation of the national Coastal Zone Management Program (CZM) and National Estuarine Research Reserve System (NERRS) under the Coastal Zone Management Act of 1972 (CZMA). Covered in the report are the major accomplishments in program administration, particularly in implementing the Coastal Zone Act Reauthorization Amendments of 1990, and problems encountered for the two preceding years. The CZMA requires that the National Oceanic and Atmospheric Administration submit this report to Congress no later than April 1. Reporting requirements are set forth in Section 316 of the CZMA.

The first of the report's two volumes is a national overview of programs under the CZMA and highlights efforts in implementing the programs for the preceding fiscal years. It will give a brief history of the Coastal Zone Management Program and National Estuarine Research Reserve System and NOAA's vision for the future of both programs. Volume I also identifies NOAA's interest through the CZMA in other environmental programs legislated and authorized by Congress, several of which are now facing re-authorization.

Volume II provides a more detailed discussion of the program areas highlighted in the National Overview, including case examples, especially in areas implemented under the 1990 Amendments. Volume II also contains a section covering the status and accomplishments of each state coastal management program and estuarine research reserve site. The section is organized by state, and contains summaries for state coastal management programs and reserve sites located within that state. Volume II also contains appendices summarizing the status of coastal management programs and estuarine reserves, allocation of funds, and regulations issued during the biennium.

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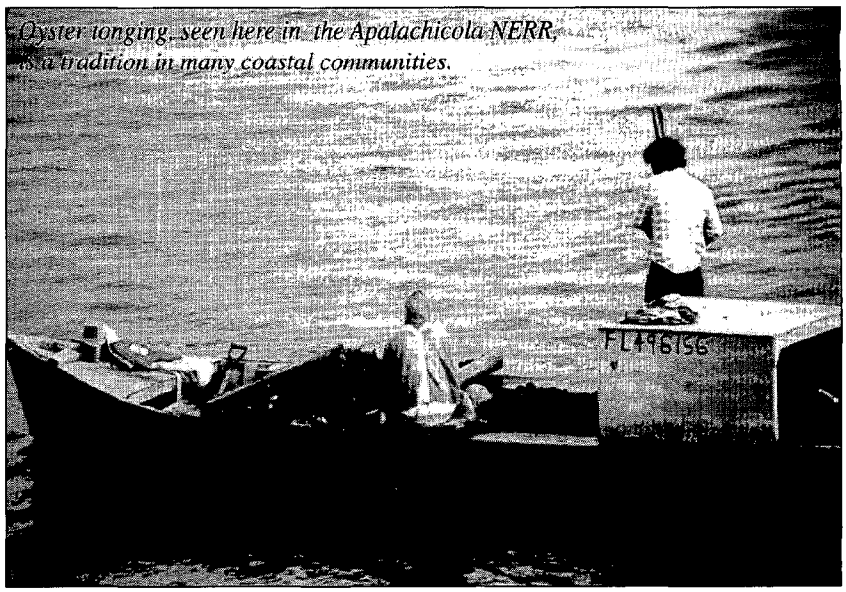
As the interface between land and water, the U.S. coastline supports a wide range of human activities — from industry, mining and shipping to fisheries and recreation — that provide the nation with a host of economic and environmental benefits. Coastal waters are among the nation's most biologically productive regions, providing the nutrients, nurseries and spawning grounds for the vast majority of all marine life, including 70 percent of the U.S. commercial and recreational fisheries harvest. In 1988, for example, commercial fishery employment topped 350,000 and more than 17 million people spent over $7 billion on recreational salt water fishing.

The U.S. coastline also supports land and water transportation and facilitates economic activity. There are approximately 190 seaports in the U.S. handling record volumes of foreign and domestic cargo — 2,088.0 million short tons in 1988 alone, according to the U.S. Maritime Administration. Industrial and commercial centers — ranging from shipbuilding and offshore drilling platform construction yards to oil refineries, electric generating plants and seafood processing facilities — are also located in coastal regions. Many of these facilities are drawn to the coast because they depend on access to water transportation and port facilities. These trade industries are vital to the nation's economy and provide jobs for many Americans.



Oyster tonging, seen here in the Apalachicola NERR, is a tradition in many coastal communities.

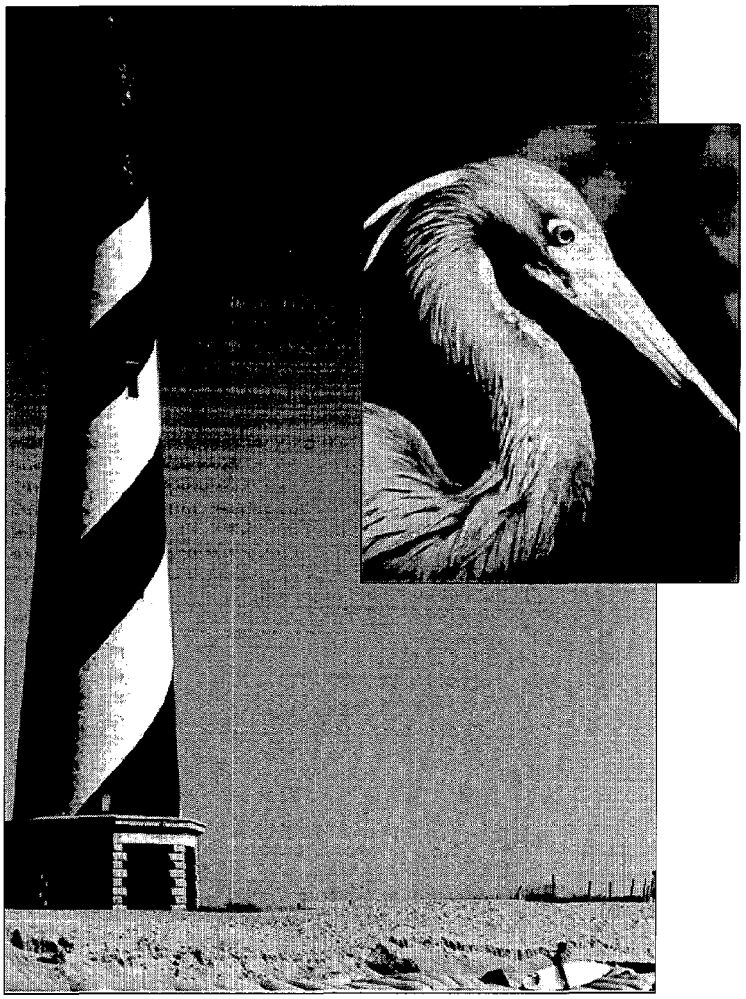
The recreation and tourism industries, which stimulate billions of dollars in economic activity, also have a large stake in coastal areas. The average American visits the shore for recreational enjoyment an average of 10 days a year. Coastal recreation goes much beyond traditional beachgoing. An estimated 94 million people are involved in boating and fishing annually. Wind surfing, snorkeling and SCUBA diving are among the other leisure activities.

Coastal areas are also home to most of the nation's population and include such major cities as San Francisco, Seattle, Detroit, Boston, New York and New Orleans. Almost half of the U.S. population resides in coastal counties, which account for only 11 percent of the Nation's land area. From 1960 to 2010, the National Oceanic and Atmospheric Administration (NOAA) projects the U.S. coastal county population will increase from 80 million to more than 127 million people, an increase of about 60 percent. The human population density of coastal counties is already more than 10 times the national average, and is projected to increase by 12 percent by the year 2010.

The many demands for access to and use of coastal resources have placed considerable stress on this fragile and finite area. Nonpoint source pollution threatens the health of the nation's shores and biologically productive estuarine ecosystems. Coastal wetlands are disappearing at alarming rates. The State of Louisiana is experiencing the largest loss, with over 50 square miles disappearing each year. Natural hazards, like Hurricanes Andrew and Iniki and the typhoon that hit Guam in 1992, continue to threaten the people who live along the coast. The federal government has spent a tremendous amount of money on disaster assistance in flood hazard zones along the coast — over $5 billion from 1965 to 1989.

In 1972, the Congress enacted the Coastal Zone Management Act (CZMA) to deal with the increasing stresses on the nation's coastal areas. Administered by NOAA, the CZMA created a unique, voluntary partnership of federal and state government to reduce conflicts between land and water uses in the coastal zone and to protect fragile coastal resources. To this end, the CZMA seeks a balance between preservation and economic development, and promotes the wise use of the valuable and declining resources of the nation's 95,000 miles of shoreline.

Under the CZMA partnership, the federal government and participating states share the responsibility for effectively managing coastal areas and resolving conflicts between competing uses. States and island territories are on the front line, developing coastal zone management (CZM) programs, which are designed to meet their individual needs, but also take into account the broader national interest in wise management of coastal resources. NOAA promotes the joint federal-state interest in coastal management by assisting states with development and implementation of CZM programs; allocating federal funds to implement these programs; and ensuring that state CZM interests are represented at the federal level and that the federal interest is adequately represented in state CZM programs.



Two kinds of federal incentives are built into the CZMA to foster state participation. The first incentive is federal matching funds, which help states meet the cost of implementing and enhancing CZM programs. The second incentive is federal consistency authority — a tool which allows CZM programs to address the adverse impacts of federal activities on coastal resources. Specifically, this provision requires that federal actions and federally permitted activities be consistent with a state's federally approved CZM program, if those actions or activities affect natural resources, land uses or water uses in the state's coastal zone.

To receive federal approval, state CZM programs must adhere to the guidelines specifically articulated in the CZMA. Specifically, these programs must work to:

- reduce the risk to life and property from coastal storms and erosion by directing coastal development away from hazardous areas;

- protect dunes as the first line of defense against storms;

• manage land use as they impact coastal resources and water quality;

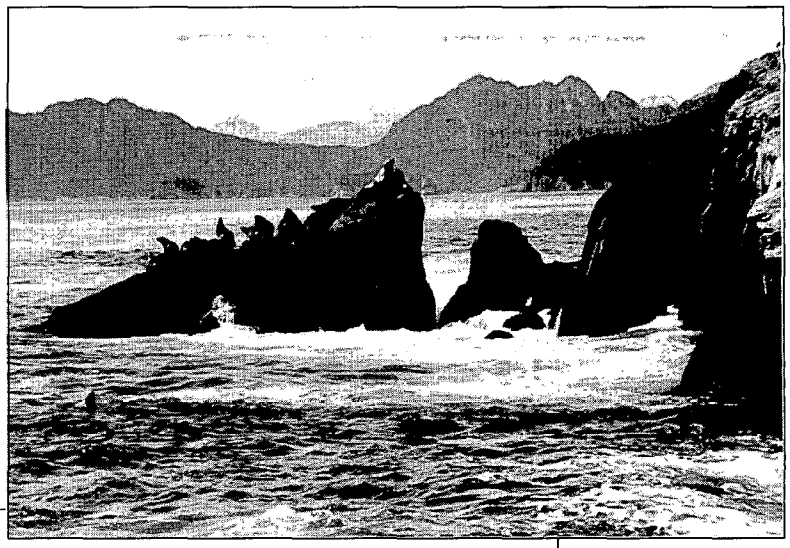
• increase public access to the nation's coastal resources for recreational enjoyment;

• assist cities in revitalizing urban waterfronts;

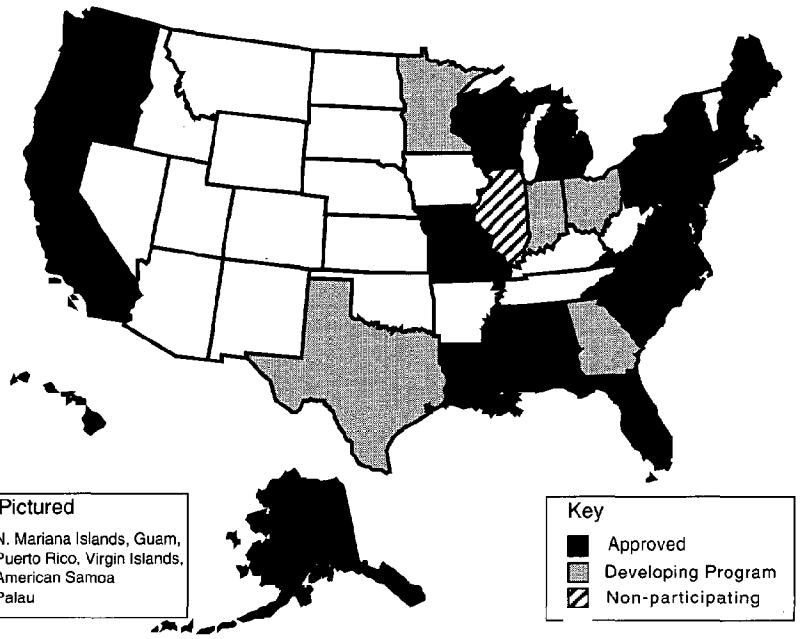
• assure that industries dependent on coastal locations, such as ports, marinas and commercial fish landings, are not preempted by land uses that do not require a waterfront location; and

• resolve complex interagency conflicts that arise in land use decisionmaking.

Since 1976, with the approval of the first state CZM program in Washington, a network of 29 state and territory programs covering 94 percent of the U.S. shoreline has evolved to work toward a balance of wise use and protection of sensitive coastal areas. This number is expected to grow in the future. NOAA currently is working with the states of Georgia, Ohio, Texas, Minnesota and Indiana to develop CZM programs for federal approval.



State Coastal Management Program



Above: Sealions take refuge along the Alaskan coast.

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Near left: Managers at the Rookery Bay NERR in Florida work to protect wildlife, such as this egret.

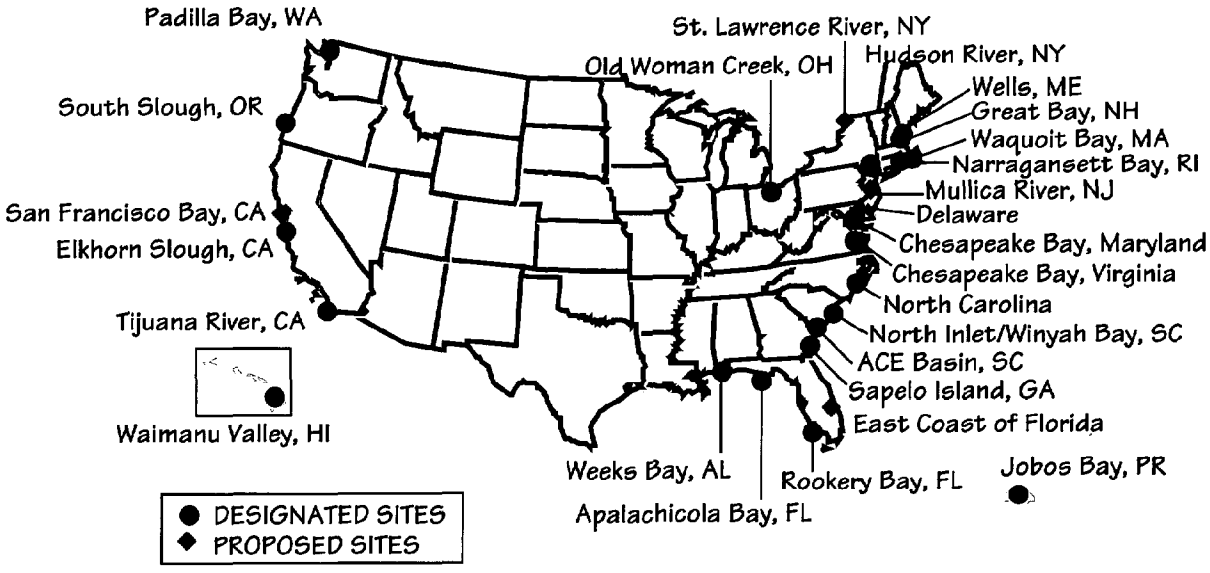
Far left: The Cape Hatteras Lighthouse depicts the history and culture of North Carolina's coast.

The CZMA partnership also extends to the nation's estuaries, those shallow waters where rivers meet the sea. Estuaries are vital to sustaining marine life and, by nature, to providing storm and flood protection and pollution control. The CZMA created a National Estuarine Research Reserve System (NERRS) to preserve estuarine areas from pollution and the pressures of development for long-term monitoring and research. Administered by NOAA, the NERRS is a federal-state partnership designed to protect areas representative of the estuarine environment throughout the nation. Through this program, NOAA and the states have the opportunity to study the natural and human processes that affect estuaries so that stresses on these highly productive areas can be minimized.

Since 1972, the national estuarine reserve program has grown from one 4,400-acre site in Oregon to a 22-site system managing almost 425,000 acres of estuarine lands and water in 20 states and Puerto Rico. Known as National Estuarine Research Reserves, these areas protect a wide range of special ecosystems, from the Port Orford cedar forest of South Slough, Oregon, to the salt marsh of Sapelo Island, Georgia; from the swamp forests in Old Woman Creek, Ohio, to the blue crabs and brown pelicans in Weeks Bay, Alabama; and from the salt ponds and barrier dunes in Waquoit Bay, Massachusetts, to the mudflats and coastal sage of Tijuana River, California.

Research and education projects are emphasized at reserve sites in order to produce information useful to coastal managers. Over the years, NERRS research functions include performing pilot projects on coastal restoration; assessing and abating nonpoint source pollution; monitoring species; conducting inter-disciplinary studies of estuarine productivity; and creating computer modeling of ecosystems disrupted by human activity. The NERRS also promote an awareness of estuarine resources for the public through lectures, interpretive exhibits, and outreach programs.

The National Estuarine Research Reserve System



Over the past 20 years, state CZM programs have generated many positive returns. By discouraging development in highly vulnerable areas of the shoreline, state CZM programs have succeeded in protecting life and property from natural hazards. Currently, over 13 states have established building setbacks from the ocean and passed laws to protect dunes which are the first line of defense from storms.

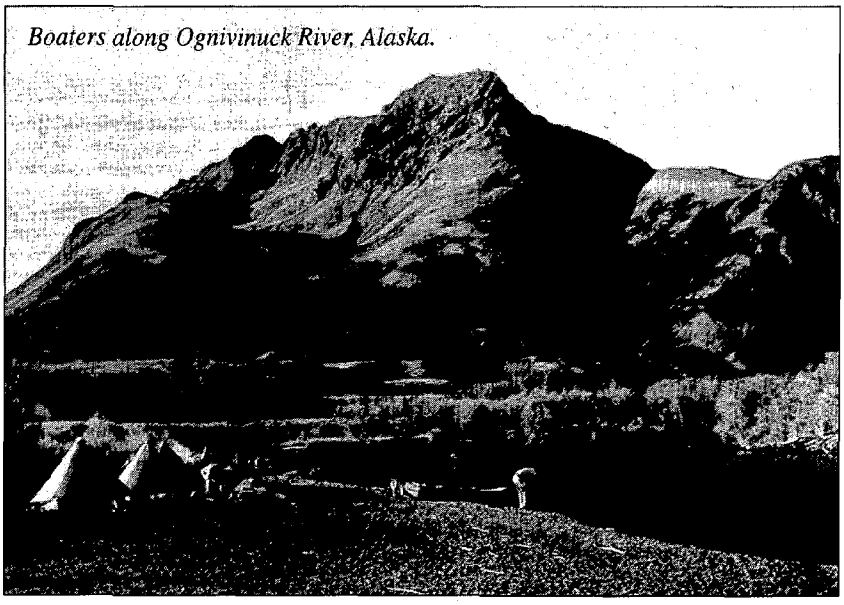
CZM programs are also guarding fragile coastal habitats against pollution and unwise development. Between 1985 and 1988, state CZM programs acquired 3,400 acres of ecologically and recreationally important coastal areas. Along Alaska's Bristol Bay, a 100 foot development-free buffer protects the habitat of the sockeye salmon, an important commercial and subsistence fishery. Additionally, several states, including Virginia and Washington, are developing educational, incentive-based and regulatory shellfish enhancement programs to restore degraded shellfish beds.

Public recreational use of coastal areas has been enhanced through improved public access ways and construction of boardwalks and boat launching facilities. Between 1985 and 1988, 359 public access projects, such as fishing piers, boat launches and dune walkovers, were constructed under the leadership of CZM programs. Furthermore, state coastal management programs have helped encourage revitalization of urban waterfronts in cities like Baltimore, Seattle, Detroit and Philadelphia and have promoted water dependent uses of the coast, such as ports and marinas, commercial fisheries and recreation.

The experiences of the past 20 years demonstrate that this federal-state partnership is working well and is producing measurable, beneficial changes in the management of coastal resources. But the job is far from over. As coastal populations continue to increase, the demand for intensive development of the coastal zone will increase, creating conflicting and competing demands for housing, industrial and urban development, and recreational facilities on these finite resources.

CZMA — The New Challenge

In 1991, Congress presented a new challenge to coastal states and island territories to confront the most pressing coastal issues. With enactment of the Coastal Zone Act Reauthorization Amendments (CZARA) of 1990, states were asked to do more to combat the problems of coastal water quality, specifically *nonpoint source pollution* — pollution resulting primarily from runoff from land use activities. Nonpoint source pollution contributes more than half of the suspended solids, metals, and bacteria which contaminate U.S. coastal waters. CZARA also encourages states to develop new and innovative approaches for tackling such critical national issues as wetlands loss, cumulative and secondary impacts of growth, increased threats to life and property from



Boaters along Ognivinuck River, Alaska.

coastal hazards and dwindling opportunities for public access to the shoreline.

Coastal Nonpoint Pollution Control Program

Over the past three years, NOAA has worked closely with states to respond to these new, ambitious mandates. The new Coastal Nonpoint Pollution Control Program (CNPCP), under section 6217 of CZARA, recognizes that the solution to coastal nonpoint pollution depends upon effective state and local action. Under this new program, NOAA and the Environmental Protection Agency are working with states to develop coastal nonpoint programs by July 1995 that address land uses generally known to cause or contribute to coastal nonpoint pollution. These coastal nonpoint programs will include enforceable policies to ensure implementation of management measures that are both remedial and preventative.

In implementing section 6217, NOAA and EPA published two guidance documents — one specifying management measures for sources of nonpoint pollution in coastal waters and one discussing NOAA and EPA expectations for program development. The technical guidance covers a variety of nonpoint sources, including agriculture, forestry, urban runoff, hydromodification and marinas.

To assist states in developing coastal nonpoint programs, NOAA and EPA sponsored seven regional workshops in 1993 to provide states and island territories with a chance to discuss technical and program guidance, as well as identify needs for technical assistance from federal agencies.

Enhancement Program

NOAA has also worked closely with the states in implementing a new, voluntary Coastal Zone Enhancements Program under section 309 of CZARA. The program gives states and territories the opportunity to compete for additional federal funds to strengthen their coastal management programs in any of eight objectives for national interest enhancement .

Dune erosion challenges coastal managers.

The objectives include:

- wetlands protection and restoration;
- increased opportunities for public access to coastal areas;
- control of cumulative and secondary impacts of development along the coast;
- protection from coastal hazards;
- special area management planning;
- management of ocean resources;
- reduction of marine debris in the coastal environment; and
- siting of energy and government facilities along the coast.

The program encourages coastal states and territories to develop new and innovative approaches to tackling these problems. States are encouraged to achieve these objectives by strengthening their coastal management programs with new laws, regulations, or other enforceable mechanisms to provide greater protection for coastal resources.

All eligible coastal states and island territories are participating in the new Coastal Zone Enhancements Program. States began the effort by assessing the status of their coastal resources and current management programs in each of the eight enhancement areas and creating multi-year strategies for action.

NOAA evaluated the states' work and awarded enhancement grant funding based on the evaluations. The most common priority areas identified by the states are wetlands protection, control of cumulative and secondary impacts of growth, protection from coastal hazards, and public access to coastal areas.

Now in the third year of implementation, the Coastal Zone Enhancements Program has enabled NOAA and the states to better address the coastal issues of the 1990s and prepare for the issues of the future. Through these efforts, NOAA and the states have laid the foundation for substantial improvements in the way the nation manages coastal resources.

Program Development

With the reinstatement of section 305 program development funds, NOAA is assisting five states — Georgia, Indiana, Minnesota, Ohio, and Texas — in developing coastal zone management programs. Each of these states welcomed the opportunity to continue and complete work that began in the 1970's to join in the federal-state partnership. The states are working closely with NOAA to craft CZM programs that balance use and protection of coastal resources.

Program Adminstration

In addition, NOAA issued policy guidance on two new requirements under section 306 of the CZMA. Under section 306(d)(14), state coastal management programs must provide for public participation in the state review of federal agency consistency deteminations under section 307(c)(1). The second requirement, under section 306(d)(15), stipulates that each coastal management program provide a mechanism to ensure that all state agencies adhere to the program. NOAA developed policy guidance for those provisions and is currently asessing state compliance with these requirements. NOAA will review each state's compliance with the guidance during routine program evaluations under section 312.

Federal Consistency

Greater emphasis has been placed on outreach to states and federal agencies to promote the benefits of the federal consistency provisions under section 307 of the CZMA. Through its federal consistency coordinator, OCRM has improved coordination with other federal agencies, increased guidance to states on the use of the federal consistency review process, and worked with the states during appeals to the Secretary of Commerce on consistency determinations.

Coastal Zone Management Fund

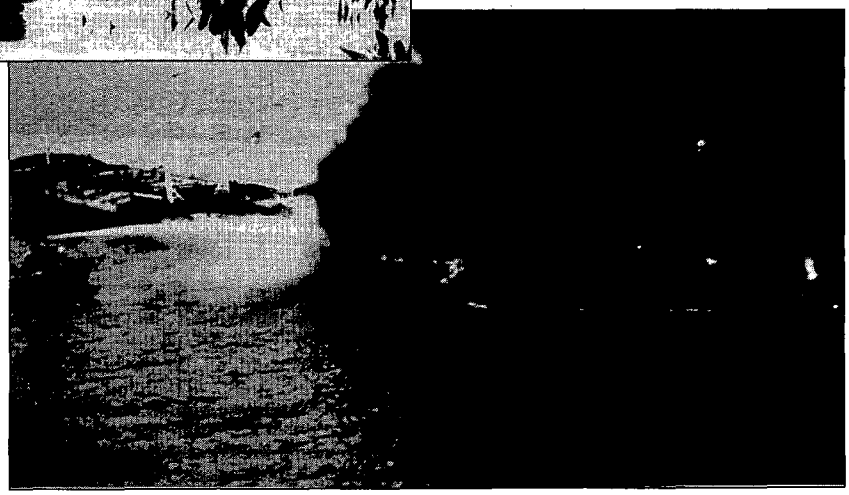
With the creation of the new Coastal Zone Management Fund under section 308 of CZARA, NOAA is working to identify projects that benefit CZM and National Estuarine Research Reserve activities. The CZM Fund enables NOAA to sponsor regional or inter-state demonstration projects, emergency grants, and other projects that are designed to further national objectives of the CZMA. While CZM Fund moneys were directed for program administration and the enhancement grants program during the biennium, an increased budget allocation for FY 1994 will enable NOAA to fund projects benefitting CZMA programs.

Program Evaluations

NOAA also instituted changes to the CZMA program evaluation process, as required by the 1990 amendments. NOAA issued a final rule in July 1992, which included new provisions on interim sanctions and increased opportunities for public participation in the reviews of state CZM programs and estuarine reserves. During the biennium, NOAA placed the Waimanu Valley National Estuarine Research Reserve in Hawaii on interim sanctions. The State of Hawaii chose not to correct the problems and recently requested that NOAA withdraw Waimanu Valley from the National Estuarine Research Reserve System. In addition, NOAA placed four state CZM programs and three estuarine reserves on work programs to correct adherence problems. This interim step to invoking sanctions has enabled NOAA to work with the states and reserves to improve their programs, rather than terminate funding. These states and reserves are making progress in correcting program deficiencies.

National Estuarine Research Reserve System

Great strides were made in administering the National Estuarine Research Reserve System under Section 315, through strategic planning activities for research, monitoring and education projects. These activities will define long-term goals for the NERRS program. For example, a new, focused NERRS research program is exploring natural and human-induced change in estuarine ecosystems, specifically targeting the problem of nonpoint source pollution. In addition, phased monitoring programs at reserve sites are generating valuable, long-term data that will help define the future needs of estuarine resource management. The reserves also continue to deliver high quality and innovative education programs, such as Kids Network, a joint venture with National Geographic that allows students to explore the estuarine environment. Furthermore, NOAA has been working with four states to bring on new reserves in San Francisco Bay CA, Mullica River-Great Bay NJ, St. Lawrence River NY, and the East Coast of Florida.



Above: Canoeing on the Hudson River.

Right: Oil spill pollution, clean-up and prevention is emerging as an issue for ocean and coastal managers.

Far right: Public access to coastal history in Pennyslvania.

Excellence Awards

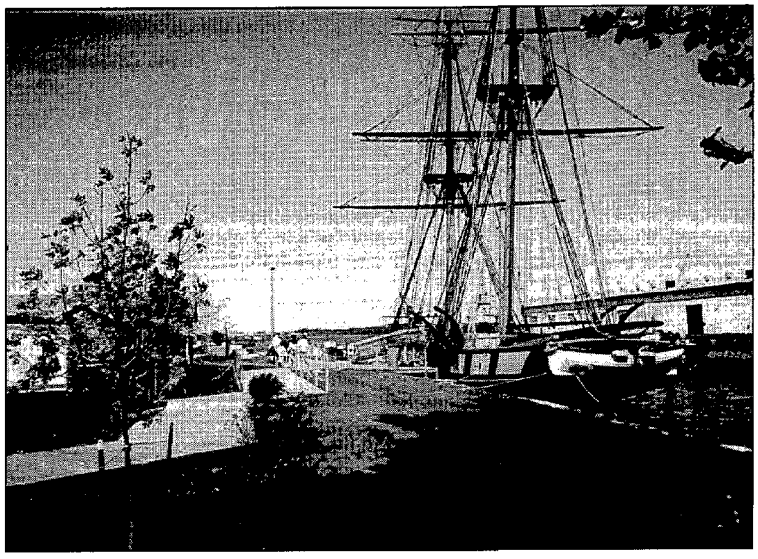
NOAA initiated an awards program recognizing excellence in coastal and ocean management. In September 1992, NOAA hosted an awards ceremony in Washington, D.C. honoring the first recipients of the awards. During the ceremony, NOAA honored Walter B. Jones, late Chairman of the House Merchant Marine and Fisheries Committee for his long-standing commitment to protecting ocean and coastal resources. In addition, NOAA honored 17 people and government agencies across the country who dedicated countless hours and energy to improving the state of our nation's ocean and coastal resources.

CZM Interaction through Education and Outreach

NOAA recognizes the growing need to share information with state and local governments and the ocean and coastal community at-large to facilitate good, sound coastal resource management decisions. To this end, NOAA annually sponsors a program managers' meeting in Washington D.C. to bring together managers of state coastal programs, National Estuarine Research Reserves and National Marine Sanctuaries and share information on new concepts and research developments. This forum enables NOAA and the states to identify creative and innovative ways of dealing with coastal environmental problems.

NOAA also plays an active role in the Coastal Zone Conference series, an international forum devoted to ocean and coastal management. The conference brings together disparate disciplines that deal with ocean and coastal issues — professional planners, engineers, government officials, scientists, business leaders, and educators — to discuss, debate, and find solutions to the conflicting problems relating to conservation and development of the shoreline. At Coastal Zone 93 (CZ 93), the eighth conference in the series, NOAA spotlighted its ongoing efforts to deal with a myriad of coastal and ocean problems, such as coastal nonpoint source pollution and the threats of coastal hazards, such as hurricanes, and showed how building partnerships and promoting education can enhance sound resource protection.

In addition to sharing information with the states and the coastal and ocean community at large, NOAA recognizes the value of educating the public on existing and future threats to our country's coastal resources. In 1982, NOAA and coastal states launched a nationwide observance to focus on the beauty, diversity and value of coastal habitats. Called "Coastweeks," this nationwide observance takes place the last two weeks in September and the first week in October and features a number of activities, including statewide and local beach cleanups, boat cruises, coastal walks, seminars, art shows, photography contests and museum exhibits. These activities, which take place in coastal communities and at National Estuarine Research Reserve and National Marine Sanctuary sites around the U.S., are aimed at educating the public on the urgent need for improved coastal planning and management.



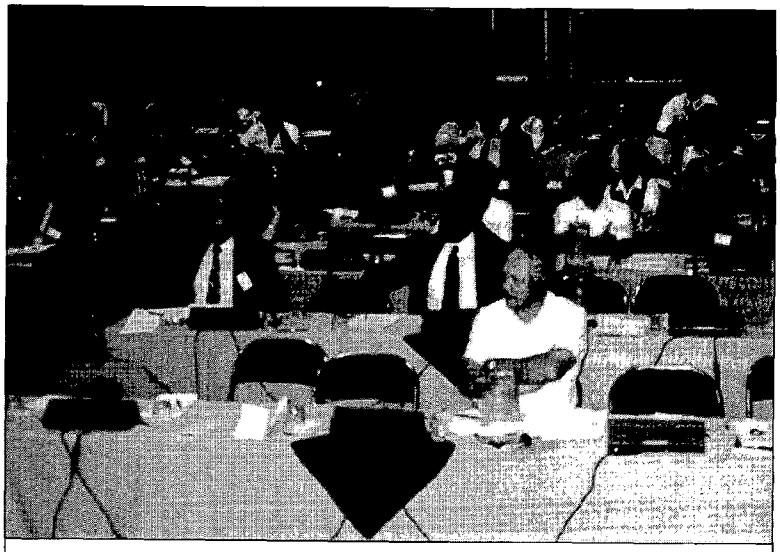
The job of sound coastal management does not rest solely at the state level. NOAA recognizes the need to coordinate and integrate the CZM program with other federal agency programs that have compatible goals. In 1993, NOAA updated an agreement that was negotiated in 1988 with the Environmental Protection Agency (EPA) on ways to better coordinate the national CZM program with EPA's National Estuary Program, which aides in the development of region-specific restoration and protection strategies for the nation's estuaries. This agreement establishes a mechanism at the national level to ensure that CZM programs and individual NEP programs complement and reinforce each other.

Over the past two years, NOAA and the Federal Emergency Management Agency have worked closely with the U.S. Congress on legislation to reform the National Flood Insurance Program (NFIP). One of the most important factors in coastal development has been the NFIP, which provides Federal flood insurance for structures built in high hazard areas. Under its original mandate, the NFIP is to be used as a tool to promote sound floodplain management, as well as reduce flood losses and the federal government's disaster relief expenditures — a mandate that is fully consistent with that of the CZMA. NOAA has worked with FEMA on a number of issues, including developing erosion risk management criteria for the Community Rating System and developing a nationwide coastal erosion mapping program. NOAA has also participated in FEMA's post disaster mitigation team visits to Florida and Hawaii to inspect the damage caused by Hurricanes Andrew and Iniki, respectively, and to recommend actions to mitigate damage from future storm events.

NOAA also assists states in resolving any differences between them and federal agencies over the implementation of the Federal consistency provisions under section 307 of the CZMA. Over the past two years, NOAA has placed greater emphasis on outreach to states and Federal agencies to promote benefits of federal consistency and to ensure that states and federal agencies fulfill their consistency responsibilities. For example, NOAA worked with the State of North Carolina and the U.S. Navy to resolve a long-standing dispute over the appropriate use of consistency regarding Navy activities. This resulted in an agreement between North Carolina and the U.S. Navy outlining the appropriate use of consistency and the types of activities the state has the authority to review.

OCRM staff members visit the Chesapeake Bay Reserve in Maryland.

Recognizing that threats to natural resources are not stayed by national boundaries, NOAA actively participates in international activities to improve the quality of and strengthen the protection of coastal and marine resources. Priority support is given to those activities which directly involve U.S. ocean and coastal resources over which NOAA has responsibility. These are primarily transboundary issues with Canada, Mexico, the Caribbean region and the Pacific island states. Among these activities are NOAA's efforts to protect the habitats of the Tijuana River National Estuarine Research Reserve from pollution sources in Mexico, and the international coordination and cooperation between the U.S. and Canada to protect the valuable resources of the Gulf of Maine through the Gulf of Maine initiative.



International conferences, such as the Pre-World Coast Conference 93 Workshops sponsored by the U.S.A. in New Orleans, and the one below in Japan, fuel partnerships between the United States and other coastal countries.

The Gulf of Maine Council was formed in 1989 when governors from Maine, Massachusetts, and New Hampshire entered a joint agreement with the premiers of two Canadian provinces — New Brunswick and Nova Scotia — to promote a regional approach to protecting the Gulf's resources. Since that time, the Council's existence has continued to lead, either directly or indirectly, to many coordinated and collaborative efforts in the region, covering the areas of communications and public awareness to resource management, pollution inventory and prevention, scientific research and monitoring.

During the past few years, integrated coastal zone management (ICZM) has become an important issue on the international agenda. Specifically, an Intergovernmental Panel on Climate Change is focusing on ways to deal with the impact of coastal climate change, and the United Nations Conference on Environment and Development is assisting nations with achieving their goals for sustainable development. Throughout all these negotiations and conferences, the U.S. has served as a leader in supporting ICZM through 20 years experience and support gained from implementation of the CZMA. To date, fewer than 40 coastal nations either have developed, or have begun to develop and implement some form of ICZM, but over 100 more have expressed interest in developing programs. OCRM representatives have in many ways facilitated the exchange of knowlege, including the management of marine protected areas, with other countries.

During the past two years, NOAA developed a strategic plan, defining the agency's role and agenda through 2005, in light of the significant environmental problems and issues facing our nation. Among its major components, the plan espouses environmental stewardship, with a vision for ecosystem health. That vision entails managing economic development in coastal ecosystems in ways that maintain their biodiversity and long-term productivity for sustained use. To accomplish that vision requires proactive, integrated, ecosystem-wide management.

OCRM's activities will continue to support the goal of environmental stewardship through state-based coastal zone management programs and site-specific National Estuarine Research Reserves. Among the CZM-related activities that NOAA will support through its strategic plan are: development of new coastal management programs (CMPs), bringing the total of federally approved programs to 35 by 2005; increased resources to state CMPs to strengthen integrated management efforts and address cumulative impacts on a watershed basis; and development of coastal nonpoint pollution control programs. To promote ecosystem management, NOAA will support estuarine reserves in developing ecosystem characterizations of selected sites and will initiate education and outreach efforts. NOAA will also support integrated ecosystem protection through participation with National Estuary Programs designated by the Environmental Protection Agency, including programs for the Gulf of Maine, Gulf of Mexico, and others.

The job of coastal zone management is far from complete. With adequate resources at the state and federal level, the 1990s can be a decade of significant progress in protecting valuable coastal resources and sustaining a healthy economy. State CZM programs can make great strides in protecting coastal water quality, managing impacts from coastal growth and development, protecting and restoring coastal habitats, mitigating the impacts from coastal storms, and enhancing public access and recreational opportunities in coastal areas.

Clean-up at Otter Point Creek in Maryland keeps pollution from running downstream into the Chesapeake Bay and involves the community in their environment.

Appendix

- Photo Credits

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Special thanks also to program staff from NOAA/OCRM, state coastal management programs, and national estuarine research reserves for their assistance in collecting and writing information for this report.

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